

CLAIMS

WHAT IS CLAIMED IS:

1. An impact resistant glass structure comprising:
 - a generally planar glass first layer having an outer edge;
 - a generally planar impact resistant plastic second layer spaced from and substantially parallel with said first layer, said second layer having an outer edge;
 - 10 a generally planar laminated glass third layer spaced from and substantially parallel with said first layer and said second layer, said third layer having an outer edge;
 - 15 a first spacer disposed between said first layer and said second layer adjacent the respective outer edges thereof; and
 - 20 a second spacer disposed between said second layer and said third layer adjacent the respective outer edges thereof, wherein the outer edge of said first layer, the outer edge of said second layer, and the outer edge of said third layer are adapted to be disposed in a window casing.
2. The structure according to Claim 1, including a first sealant disposed between said first layer, said second layer, and said third layer adjacent the respective outer edges thereof.

3. The structure according to Claim 2, wherein the first sealant is a polyisobutylene sealant.

4. The structure according to Claim 2 including a
5 second sealant disposed between said first layer, said second layer, and said third layer adjacent the respective outer edges thereof.

5. The structure according to Claim 4 wherein at
10 least one of the first sealant and the second sealant at least partially surround said first spacer and said second spacer.

6. The structure according to Claim 4, wherein the
15 second sealant is a polyurethane sealant.

7. The structure according to Claim 1, wherein a gas filled air space is formed between at least one of said first layer and said second layer, and said second
20 layer and said third layer.

8. The structure according to Claim 1, wherein said first layer is an annealed glass

25 9. The structure according to Claim 1, wherein said first layer has a low-E material deposited thereon.

10. The structure according to Claim 1, wherein
said second layer is a polycarbonate.

11. The structure according to Claim 1, wherein
5 said second layer is a polymethyl methacrylate.

12. The structure according to Claim 1, wherein
said second layer is a polyethylene terephthalate.

10 13. The structure according to Claim 1, wherein the
outer edge of said second layer is spaced inwardly from
respective outer edges of said first layer and said
third layer.

15 14. The structure according to Claim 1, wherein
said third layer is an annealed glass.